

Developing A Collective Organizational Learning Model: A Typological Reviews for Organization Development

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ABSTRACT

Organizational learning is traditionally structured with conventional in-house learning models aiming to equip employees with practical skills for operational needs, whereas the contemporary goals emphasize unstructured organizational learning provided with learning environments to facilitate employees' formal and informal knowledge creation. Therefore, those conventional organizational learning models are facing tremendous challenges, and it is crucial to change the traditional mode of practices into a new approach of collective learning and knowledge transfer. Meanwhile, the emergence of innovative business environment and tacit knowledge-based society urge a new form of organizational learning model to cope with employees' learning, knowledge transfer and even knowledge management. In this study, our team applies a typological review for systematically analyzing current organizational learning models aiming to modify and create a new collective organizational learning model. The new model covers the strengths of existing approaches from which the fundamental 3-Ps concept (Principles, Purposes and Processes of Organizational Learning) are derived from incorporating with a development perspective of organizational trajectories and technological innovations. We envisage that the new model could facilitate organizations to assess and adapt their organizational learning needs and orientations by applying this organic and dynamic model which emphasizes assessment on the competitive environment, technological trends and organizational growth.

Key words: Professional Development; Organizational Model; Learning Organization; Knowledge Transfer; Professional Education

1. Introduction

Organizational learning is facing tremendous challenges under a rapid development of knowledge society. It is therefore a need to review the traditional models of instructional learning (e.g. apprenticeships) in order to enhance the unconventional practices of collective learning. Current research (e.g. Sorakraikitikul and Siengthai, 2014; Cerne *et al.*, 2012¹; Usman *et al.*, 2011; Škerlavaj, Song and Lee, 2010) have highlighted the importance of developing organizational learning culture among employees and organizations. The culture is able to better facilitate knowledge transfer process. Indeed, the ultimate goal of organizational study is to facilitate the development of an effective learning organization (e.g. Vaill, 2007; Carmeron, 2005) and thus the research and enhancement of organizational learning practices is always a key to the said goal (e.g. McShane and Von Glinow, 2013; Argote and MironSpektor, 2011; Selden and Sowa, 2004).

Likewise, current studies suggest that a long-term success of business practices is mostly associated with an effective learning organization (e.g. Kareem, 2016; Amitabh and Sinha, 2012; Senge, 1990), which is essential to a sustainable and innovative culture development. These studies also argue that the development of employees' tacit knowledge sharing is essential, and more preferable than just providing them with skill trainings.

In respect of the establishment of an effective learning organization, organizational studies have emphasized some key elements of learning approach and instructional design in order to cope with rapid changes in organizations. For example, Farago and Skyrme (1995) suggest a proactive and flexible learning approach to cope with changes. Likewise, Bunderson and Reagans (2011) believe that there is a growing trend towards the application of collective learning practices, which include risk taking, goals sharing and knowledge matching, instead of simply applying the traditional learning models through apprenticeships. Furthermore, Anderson and Lewis (2014) emphasize the importance of providing employees with an approach of "learning through practices" (e.g. learning-by-doing). Moreover, it is also important to note that there is a fundamental changing of business practices in the areas of

strategic thinking, marketing planning, management process, employees' training and learning in the tremendous development of virtual technologies (e.g. Nevo *et al.*, 2011; Castronova, 2007). A paradigm shift from the traditional in-house training courses to an online training model is one of the typical examples.

2. The emergence of innovative business and tacit knowledge-based society

Nowadays, the traditional mode of instructional and informative learning in organizations becomes ineffective and inflexible. Responding to the changing needs of organizational development, it is essential to establish effective learning strategies and cultivate organizational learning culture to maintain sustainability in an organization (Lau, 2014). Further to maintain competitiveness and organizational capabilities in the environment with considerable social and economic changes, establishing a learning organization and the knowledge transfer process is deemed essential (Weldy, 2009). The establishment of a successful learning organization is indeed actualized through a vital process of knowledge sharing and transfer among employees. Various key organization studies have confirmed the contributions of collective learning approach for an effective learning organization (e.g. Finger and Brand, 1999; Senge, 1998) whereas the quality of service and explicit knowledge transfer have proved with improvement by certain empirical studies (e.g. Barkur *et al.*, 2007).

Needless to say, learning is a vital key to enrich knowledge through a process of integration (Duffy and Cunningham, 2000) whereas it is generated by integrating individual's prior experiences and knowledge (Kolb, 1984; Piaget, 1967). To understand and promote effective organizational learning and knowledge transfer, a number of models were suggested by researchers who are studying organizational learning and/or cultures. In order to enhance employee's individual development as well as organizational practices in collective and team learning, the Lewinian Experiential Learning Model was raised. It is a cyclical key learning model applied in organizational learning, management and training aiming for employee's capacity enhancement in effective actions. It includes stages of observations and reflections;

concrete experience; testing implications of concepts in new situations; and formation of abstract concepts and generalization (Kolb, 1984; Kim, 1993). Senge's Team Learning Model (1990) has further emphasized learning through effective dialogue (divergent thinking process) and discussion (convergent thinking process) among group members to develop collective intelligence for solving complex problems and developing innovative solutions. Some researchers have echoed the importance of strengthening tacit knowledge by sharing among employees (e.g. Becker and Huselid, 2006) and through emphasizing the work culture of autonomy (McShane and Von Glinow, 2013).

Nevertheless, organizational learning is traditionally *structured* with conventional in-house learning models aiming to equip employees with practical skills for operational needs (Amitabh and Sinha, 2012). In contrast, the contemporary goals emphasize *unstructured* organizational learning provided with learning environments to facilitate employees' formal and informal knowledge creation (Amitabh and Sinha, 2012). Indeed, organizational learning theories are shifting from informative (i.e. content-driven and skill-oriented) to transformative learning model (i.e. learner-driven and person-oriented) (e.g. Mintzberg, 1994; Bourgeois, 1984). However, traditional organizations prefer the development of practical skills for operational needs while ignoring the transformative learning approach (e.g. Brown and Starkey, 2000; Di Maggio and Powell, 1983). In brief, informative learning helps learners acquire knowledge that satisfies their needs whereas transformative learning changes their needs and values through a four-stage process: rejection; comprehension; application; and integration (Kegan, 2000). Some other learning models, such as single and double-loop learning and triple-loop learning, also mention and emphasize the concept of transformation. Single-loop learning is a common style of learning through the application of strategies and techniques for problem solving while double-loop learning emphasizes questioning the underlying assumptions, values and beliefs (Argyris and Schön, 1978). Triple-loop learning emphasizes collective learning with radical changes in knowledge through examining core values/identity and rethinking purposes/principles for renewed core values, purpose and identity (Isaacs 1993).

Apart from questioning assumptions and transforming needs and values, learning theorists (e.g. Kellogg and Whiteford, 2009; Willingham, 2009; Bransford *et al.*, 2000) suggest knowledge acquisition and application for problem solving through the provision of transfer conveys to learners. To practice and construct meaning is a kind of knowledge transfer continuously forms a ‘schemata’ or ‘procedural knowledge’ (Kirschner, Sweller and Clark, 2006); and conceptualizes organized information for acquiring new knowledge effectively (Bransford *et al.*, 2000) are related to the concept just mentioned previously. This is commonly referring to the concept of ‘scaffolding’ which promotes deeper learning and adequate knowledge transfer, which is indeed different from the approach of informative/surface learning (e.g. skill-based knowledge). . Unlike the emphases of memorizing unconnected facts, algorithmic procedures, and other skill-based knowledge in the surface learning approach (Entwistle, 2009), learners’ intrinsic interest would be triggered in the learning processes through the approach of deeper learning (Nelson-Laird and Garver, 2010). These concepts in relation to knowledge transfer mentioned above are mostly based on Vygotsky’s (1978) concept of the Zone of Proximal Development (ZPD). It suggests a dichotomy of learning process: one end is perceived as boring for its easy learning nature (e.g. skill-based training) while the other is considered having trouble to connect new knowledge (e.g. difficult in nature) with past experiences by the learners. To motivate learners with deeper learning, an appropriate level of cognitive struggle within the ‘learning cycle’ should be provided.

However, some organizational researchers (e.g. Easterby-Smith and Burgoyne, 1999; Edmondson, 1999) have raised the difficulty and deep concern of encouraging knowledge transfer and sharing among employees in any type of organizations. Some (e.g. Argyris, 1985) even observed that the creation of ‘defensive routines’ or programmed mental reactions within daily operation among employees, either intentionally or subconsciously, would affect organizational development in knowledge transfer and sharing. Senge (1990) believes that it seems to be more difficult to motivate employees to apply new ideas (i.e. transfer and application of new knowledge) into daily practices than to generate new ideas. To tackle the issue of routinized practices, an open atmosphere with a friendly environment will facilitate

successful collective learning among employees, which deems more essential and effective for knowledge sharing and transfer. One of the approaches suggested by Heorhiadi and his colleagues in 2014 is to establish an exploratory learning organization with open atmosphere for inspiring (i.e. covers and hides in an unexpected way) new ideas and self-reflection among employees. Similarly, Senge's (1990) concept of "dialogue" implies the provision of a free and creative exploratory environment for knowledge sharing among employees, which indeed echoes the concept of open atmosphere. These theoretical concepts emphasize the provision of an open, free and creative exploratory environment enhancing communications, discussions and knowledge sharing among employees and/or other people, which are realizing through the advanced technologies for collective learning. Wikis, crowdsourcing and Web 2.0 are typical examples of "mass collaboration" in collective learning (e.g. Tapscott and Williams, 2007). Indeed, the emergence and rapid development of tacit knowledge-based society are expanding and increasing transparency in association with the technological trends (Tapscott and Williams, 2011). Sharing knowledge and real-time information through the Internet, other instant communication tools and social media applications become fundamental for building a tacit knowledge-based society. The technology breakthroughs not only can better inform employees the most updated knowledge, they would facilitate employees to share, transfer tacitly and create new knowledge collectively.

Coping with the challenges derived from the innovative business and disruptive technologies, a consolidated approach of collective organizational learning is urged to develop through a systematic way of reviewing the current organizational learning models. A typological review and analytical method is applied as a systematic strategy for reviewing the related qualitative data retrieved from the literatures of the current organizational learning models. Taking reference from the SAGE Encyclopedia of Qualitative Research Methods (Given, 2008), the basic objective of the typological review and analysis is to develop "a set of related but distinct categories within a phenomenon". Typological development is characterized through a systematic categorization process of pre-establishing a structured framework, e.g. a dichotomy of learning orientation: operational and conceptual learning in this review. Then, the process of

identifying commonalities and variations within a data set in relation to the studied phenomenon is being investigated. Through the differentiation process, “patterns of similarity and difference” could further be identified and established that an ideal model of the related phenomenon could be consolidated and reconstructed (Given, 2008). By applying this systematic typological reviews and analyses as the reviewing strategy, data set in relation to the current organizational learning models have been thoroughly examined in the following sections.

3. The current organizational learning models and reviewing strategy

Unlike traditional organizations who prefer their employees to learn practical skill-sets for daily operation needs, a number of current organizational learning models (e.g. Argyris and Schön’s (1978) single- and double-loop learning model; Hedberg’s (1981) unlearning model; Senge’s (1990) team learning model; model of learning company by Pedler, *et al.*, (1991); Isaacs’s (1993) triple-loop learning model) prefer individual and/or collective learning. These models basically stress the process of conceptualization with cognitive thinking basically for new knowledge acquisition, application, dissemination, and/or management. Besides, some would emphasize the process of creation, internalization, transformation and/or unlearning. Principally, organizational learning may inspire innovative ideas, enhance problem solving skills, organizational development and/or transformation. Honey and Mumford’s (1986) “Learning Styles Questionnaire (LSQ)” for Measurement, a classical measurement model on organizational learning effectiveness, emphasizes behavioural change of individual’s learning attitudes towards know-why (e.g. by asking questions), independent learning (e.g. by taking responsibility for own learning) and problem solving (e.g. by suggesting ideas and exploring alternatives) instead of learning know-what and know-how. . This also suggests that organizational learning effectiveness is aligning with learning through cognitive and high-order thinking for self-reflection, problem solving and organizational transformation.

Although the current trend and basic principle of organizational learning models emphasize why learning and cognitive thinking for problem solving and/or organizational transformation in general, a number of current models have their own characteristics and suggested foci. A typological review of current organizational learning models is briefly described with each abbreviation, suggestion and emphasis at Table 1.

Insert Table 1 here

For simplicity, those current models with similarities are grouped together for easy identification and conceptualization. In terms of the form of existence, the models are ranging from a linear form of cycle, an interrelated form of components to a matrix form of complexity. Table 2 is constructed below for classification of the existence form of the models.

Insert Table 2 here

In respect of the classification of existence form of organizational learning models, there are an inclination trend of models aligning with the interrelated form of components (IFC) following by a linear form of cycle (LFC), whereas the matrix form of complexity (MFC) is less for adoption.

Besides, the models could be classified by operational and conceptual learning orientation. Whereas operational is inclined to action-oriented, conceptual is more of idea or concept-oriented. Table 3 is constructed below for classification of the learning orientation of the models.

Insert Table 3 here

We observed that the classification of learning orientation of the organizational learning models have an inclination of models which are usually associated with a combination of the operational and conceptual learning (OCL) orientation. Some are otherwise connected with the

sole operational learning (OL) orientation. However, the conceptual learning (CL) orientation is likely not in isolation existence. It is because the concepts of unlearning model, single- and double-loop learning model and/or triple-loop learning model have influence on some models in OCL orientation, whereas MLC, TLHM, HOLF, MCLO and TLS are the typical examples among others.

In sum, the current organizational learning models have their own characteristics and suggested foci. However, the overall coverage of any models concerning the principles, purposes and processes (the 3-Ps) of organizational learning seems not comprehensive enough to fully comply with the 3-Ps. In other words, the current organizational learning emphasizes individual and collective learning through the process of conceptualization with cognitive thinking (i.e. principles) for a cyclic process of new knowledge acquisition, application, dissemination, management, creation, internalization, transformation and unlearning (i.e. processes). These processes are inclined to achieve innovation, problem solving skill, organizational development and/or transformation (i.e. purposes). Conversely, individual models are scattering over instead of including in the 3-Ps. Individual models are likely non-comprehensive but complement each other. Different forms of existence and learning orientations of the organizational learning models categorized in the tables above are illustrating the phenomenon described by the aforesaid statement. In addition, the above mentioned typical examples of borrowing influential concepts and/or suggestions from the basic or classical models to form one's own model are obvious illustration of the needs and ways to become a comprehensive model through complementing each other.

In view of the emergence of innovative business practices and knowledge-based society, the needs to establish a new organizational learning model embedded with unconventional ways of learning and exploratory environment in the learning organization seems essential. Henceforth, we attempt to conduct a typological review on the current organizational learning models through the application of typological reviews as the analytical method. Through the systematic typological reviews and analyses, we aim to conceptualize a new organizational

learning model consolidating the characteristics and suggested foci of the current models, which are coherent to the 3-Ps and matched with the arising needs of the contemporary organizations.

4. The typological reviews and analyses

There were various studies/models in relation to organizational learning (OL) in the realm of learning organization (LO) of which individual studies/models may be different with one's own focus while similarities might also be observed. The method of typological reviews applied in the Table 1 and Table 2 for the systematic classification of existing OL models is based on literature review on the definition/orientation of OL, its basic components and levels of learning, in which multiple-categorization is possible. Orientation of OL refers to a collection and accumulation of employees' learning systems, structures and process (Easterby-Smith and Burgoyne, 1999) whereby there are different components, such as knowledge acquisition, sharing, use and storage (Levine and Prietula, 2012; Shipton, 2006) and institutional, group and individual level of learning (Crossan *et al.*, 1999) within organizational learning. Nevertheless, this classification system also attempted to include other relevant elements from the literature for extending the scope of orientations, levels and components in OL. This may further cover possible items for comparing differences and similarities as far as possible while categorize those OL models into different types to facilitate a potential paradigm shift.

OL is different from individual learning (IL), while OL involves various orientations and levels of learning among employees of an organization within a society/community, IL emphasizes personal cognitive development (e.g. Bandura, 1977) and behavioral change (e.g. Honey and Mumford, 1986) of an individual within a specific environment (e.g. school, family and social activity). Moreover, the basic components of organizational learning approach and process may have overlapping areas between OL and IL (e.g. knowledge acquisition and use). There may have more components within the context of organization learning, for examples,

knowledge creation, articulation, combination, internalization and socialization (Nonaka, 1991); unlearning (Hedberg, 1981; McGill and Slocum, 1993; Clark *et al.*, 1987); knowledge transfer (Ingvaldsen, 2015); transformation (Di Maggio and Powell 1983; Brown and Starkey 2000); and application (Kegan, 2000).

Apart from the basic elements/concepts adopted for constructing the typological system for model classification, there would have some more different learning orientations, components and levels for inclusive adoption. However, the system was built according to the basic elements/concepts plus a few more relevant items added onto the typological table, from which derived through the process of analytical literature review and the principles of basic foundation with relevant add up through comparative assimilation. To differentiate the basic elements from added items, an asterisk (*) is marked against the added item provided with brief explanation for its derivation in the notes of Table 1.

In brief, we observed that organizational learning models may include LO and/or OL, of which LO act as the carrier of OL who involves learning orientation and level while OL emphasizes stages of knowledge learning in the context of organization. The learning orientation includes system, structure and process as operational orientation while strategy and goal as conceptual orientation. The learning levels are divided into institutional, group and individual as internal while society/community and global as external of the LO. About the OL, the stages of knowledge learning are divided into two main stages: basic and advanced. The basic stage includes learning components of knowledge acquisition, sharing, use and storage; and the advanced stage includes creation, transformation, internalization and unlearning components. These form the basis for our classification among the OL models for constructing two tables of typological reviews of organizational learning models: one in more details and the other with summarization (See Table 1 and 4).

Insert Table 4 here

Lastly, regarding the literature review, we observed that the OL models could simply be categorized as a linear form of cycle, an interrelated form of components and a matrix form of complexity. With few exceptions, there were neither much environmental stimulation/any developmental aspect nor group member structure and personal learning capacity addressed among the OL models. Henceforth, these could have implications for a paradigm shift into a new model of OL through addressing the observed deficiencies on one hand. On the other hand, terminologies used in the typological reviews' table of OL will be adapted suitably in the newly created model to better reflect the scope and characteristic of the OL model.

5. The need of new organizational learning model

After the typological reviews and analyses of the current OL models, there is a rising need to consolidate a new model with comprehensive features through complementing those relevant models for the coverage of the 3-Ps. Indeed, individual models are likely non-comprehensive but otherwise complement each other. For instance, the Unlearning Model (UM), aims to push organization forward for new knowledge, which is a conceptual idea of unlearning organizational routine and old knowledge for learning and creating new knowledge (Hedberg, 1981). It focuses solely on the conceptual orientation with emphases on knowledge creation and transformation through the concept of unlearning. In contrast, the Crossan's Organizational Learning Framework (COLF) has developed four interrelated components at different levels (individual, group and organization) for operating organizational learning through group and organization structures and systems (e.g. interactive system at group level and organization routines, rules and procedures) (Crossan *et al.*, 1999). It emphasizes solely on the operational orientation with focus on the four key processes of inputs and outcomes at different levels. The examples illustrate that UM is an unconventional way of learning without reinforcing an exploratory environment in the learning organization. COLF is contradictory to UM that it prefers structural and conventional way of learning through sharing, interactive and diagnostic system at different levels embedding with an exploratory environment in the learning organization.

Besides the comprehensive needs, some essential elements facilitating for the development of an effective organization have been observed from some current research and the current organizational learning models so as to meet challenges and changes for the emergence of innovative business practices and knowledge-based society. These elements of intermediate goals include the needs for practicing collective learning; developing organizational learning culture; reinforcing organizational learning and individual capacities; establishing a learning organization and knowledge transfer process; conducting a proactive and flexible learning approach; learning through practices and collective interactions; establishing effective learning strategies and facilitative environment for learning and creativity. These elements indeed form the basic needs to address the establishment of organizational learning models so as to understand and promote effective organizational learning and knowledge transfer.

The current models did separately suggest some featuring concepts and some of the aforementioned elements, either operationally or conceptually or both, is to address the issues and needs of contemporary organizational learning for maintaining competitiveness, organizational capabilities and sustainability. Nevertheless, none of the reviewed models is inclusive of the 3-Ps and is to address all the concerned elements listed at the previous paragraph.

Therefore, a new organizational learning model, based on the 3-Ps and the observed deficiencies, is constructed at Figure 1 with reference to some models embedded with part and partial of the essential elements and the 3-Ps accordingly. Needless to say, the new model should be established from the organizational perspective while individual employees would be regarded as part of the organization. This would have implications on the basis of learning model selection for the consolidation of new model.

Insert Figure 1 here

To shed light on the construction process of the new model, those selected models are illustrating with the essential elements and the 3-Ps before giving a brief on the new model. Both the single and double-loop learning model (SDLLM) and triple-loop learning model (TLLM) emphasize the process of conceptualization with cognitive thinking, either through individual questioning the underlying assumptions, values and beliefs behind the act of problem solving (Argyris and Schön, 1978) or collectively examining core values and rethinking purposes (Isaacs, 1993), for new knowledge and/or transformative changes. Their emphases are coincident with the principles of 3-Ps while the purposes are different as in terms of problem solving cum organizational development for SDLLM and of transformation for TLLM. Although reinforcing organizational learning and individual capacities and collective learning are the elements embedded in SDLLM and TLLM respectively, they are conceptually formed instead of deliberately listed out the operational knowledge related processes.

In contrast, Huber's (1991) Organization Learning Framework (HOLF) is a knowledge process model of organizational learning which embraces four key operational stages of knowledge acquisition, information distribution, information interpretation and organizational memory. Among the said stages, the principles of cognitive thinking are embraced across the acquisition and interpretation stage via the acquisition strategy of experiential learning and interpretation strategy of cognitive map and unlearning. HOLF embeds with the principles and the full processes of the 3-Ps while the ultimate purpose is to create an organizational memory for knowledge storage. Despite HOLF including almost all elements of intermediate goals through the incorporated learning strategies, systems, structures and processes from different learning concepts and/or models, its ultimate purpose of establishing an organizational memory is operational oriented instead of driven by purposes of organizational growth. Although, it seems to focus on the internal learning level, it lacks interactive learning with the external community and global partners as well as competitors. It would only establish an internal learning organization and knowledge transfer process. Conversely, it would be a more complete process by including a learning organization with development purposes (e.g. clear

goals for organizational growth) and an external knowledge transfer process (e.g. strategic partnership) for maintaining competitiveness, organizational capabilities and sustainability.

A LO with clear goals and facilitative environment is highly conducive for effective and purposeful organizational learning. To supplement the incompleteness with organizational purpose-oriented and facilitative environment components, the Model of Learning Company (MLC), suggested by Pedler his colleagues (1991), seems appropriate to complement each other. Among its five components (i.e. strategy, looking in, structure, looking out and learning opportunities), it has repeatedly emphasized the purposes of facilitating continuous organizational improvement through learning strategy and opportunities. Besides, it also stresses the importance of facilitative environment, both internally and externally, which help to understand and learn through information technology (i.e. looking in); to allow a flexible structure for creativity and new knowledge (i.e. structure); to establish organizational climate for accommodating mistakes and encouraging self-development (i.e. learning opportunities); and to monitor a system for learning collaboration with competitors at the external environment (i.e. looking out). It is a model of learning organization which is constructed from the institutional perspective embedding with organizational purposes and facilitative environment for effective organizational learning.

Apart from incorporating unique features and relevant components of the selected models for building a new model of organizational learning, a key perspective of organization changes in learning orientation, level and stages of knowledge learning is the dynamic of the changing environment, including competitive environment and organizational growth. Although Jashapara's (2003) Model of Competitive Learning Organization (MCLO) is a dynamic model emphasizing strategic changes in organizational learning which are driven by external competitive forces, it is indeed a reactive instead of proactive approach towards dynamic. It relies on the dominant competitive force (e.g. efficiency or innovation force) for learning focus and changes, which becomes mechanical in organizational learning. However, we otherwise suggest a proactive approach of organizational planning and assessment for changes in both the

dynamic of competitive environment and organizational growth. Besides, technological innovations and impacts on organizational learning would also be proactively taken into account for adapting changes. Hence, organization changes in learning orientation, learning level and stages of knowledge learning are perceived from a developmental and cyclic perspective of organisational start-ups to organisational growth. This implies that learning organizations are organically (e.g. management and employees) and dynamically (e.g. assessment on environment and organizational growth) operated towards changes through their progresses of organizational development, even though there may have the possibility of organizational regression.

With reference to the typological reviews and selective adaptation of the current organizational models as well as the fundamental 3-Ps (i.e. principles, purposes and processes of organizational learning) and the disruptive trend of technological innovations, a conceptual framework of the new organizational learning model is constructed at Figure 1.

This model is fundamentally conceptualized from a developmental and cyclic perspective of organisational start-ups to organisational growth in a learning organization operating organically and dynamically. It consists of interrelated components of organizational learning, that includes learning orientation, learning level and stages of knowledge learning, which embeds with the fundamental 3-Ps. Besides, there are technological innovations placed in the centre of the model, which are interconnecting with the components of organizational learning. To recap, this new model includes learning organisation (LO) and organisational learning (OL), of which LO as the carrier of OL involves learning orientation and level whereas OL emphasises stages of knowledge learning in the context of organisation. The learning orientation includes system, structure and process as operational orientation whereas strategy and goal as conceptual orientation. The learning levels are divided into institutional, group and individual as internal whereas society/community and global as external of the LO. About the OL, the stages of knowledge learning are divided into basic and advanced stages. The basic stages include learning components of knowledge acquisition, application, dissemination and

management whereas the advanced stages include creation, internalization, transformation and unlearning components. Needless to say, the current models do not emphasize global level of learning, competitive environment or technological innovations, despite organizations are under the contemporary and dynamic knowledge-based society. Besides, terminologies used in the table of OL have been adapted in this new model to better reflect the scope and characteristic of the OL model.

Apart from the brief introduction of the basic concepts and components of the new model, the conceptual explanations and flows are interpreted as the developmental and cyclic perspective. There is a dichotomy of learning orientation in learning organisation who may adopt from operational to conceptual learning or vice versa, and/or mixed mode with different degree of divergent connection (e.g. mixed learning orientation with different degree of domination – operational learning dominates conceptual learning or vice versa). It is an organic and dynamic model that the degree of learning orientation depends assessment on the competitive environment and organizational growth.

Correspondingly, learning organisation may transit internally and horizontally from individual/group to institutional learning level, or vice versa, from which organizational routine is likely formed and learnt by employees at individual/group level. On the contrary, unlearning the routine for breaking through towards new knowledge is mostly driven by the transformation needs and facilitated by the management at the institutional level. Learning and operating the routine by individual employees, particularly at the organizational establishment stage, is to construct a procedural memory of actions in organization (Cohen and Bacdayam, 1994). This is important for daily operation and maintaining competence of an organization (Levitt and March, 1988). However, organizational routine would hinder new knowledge's development for coping with new challenges and demands derived from the ever-changing business world (Jashapara, 2011), especially when the transformation needs once emerged. Respectively, the nature of learning and focus of knowledge are likely reactive in nature (e.g. problem solving) and procedural focus (e.g. organizational routine as in terms of mechanical

operating procedures: Weick *et al.*, 2005) at the individual/group learning level. However, institutional learning level is more proactive in nature (e.g. vision-mission driven) and more on strategic focus (e.g. collective learning initiated by organization).

In respect of the relationship between internal and external environment of a learning organization, it may transit vertically from individual/group (internal) to community (external) and institutional (internal) to global (external) learning level. The nature of learning and focus of knowledge are likely interactive in nature (e.g. communication) and collaboration focus (e.g. operational) at the community learning level while global learning level is more transformative in nature (e.g. attitudinal or value change) and more on creative focus (e.g. conceptual). These relationships embody in the essential components of the Model of Learning Company (Pedler, *et al.*, 1991), which emphasizes the importance of both internal and external facilitative environment helping to learn. The suggestion of “looking out” for monitoring a system for learning collaboration with competitors at the external environment is particularly aligning with the vertical transition from individual/group to community aiming for knowledge transfer. This echoes the idea of organizational learning practices of tacit/explicit knowledge transfer through the application of Communities of Practice (Ingvaldsen, 2015). However, there seems to have no explicit suggestion or discussion among the organizational learning models of the element of global learning, especially in the contemporary context of globalization. Nonetheless, we further suggest the possible transition from institutional to global learning level for creativity and transformative learning. It is particularly significant for a fast-growing and expanding organization to cope with challenges deriving from global trend of the business world so as to strike for excellence in the competitive environment.

Lastly, according to the new organizational learning model, operational learning generally aligns with basic stages of knowledge learning approaches while conceptual learning aligns with advanced stages of knowledge learning approaches. The basic stages include learning components of knowledge acquisition, application, dissemination and management whereas the advanced stages include knowledge unlearning, creation, internalization and transformation.

From a developmental and cyclic perspective of organisational start-ups to organisational growth, operational learning through basic stages may evolve towards conceptual learning through advanced stages and vice versa.

6. Conclusion and Implications

Traditional mode of instructional and informative learning, such as apprenticeships, seems less flexible and proactive to cope with the rapid changing environment, particularly facing the emergence of innovative business and knowledge-based society. Learning through virtual technologies instead of traditional in-house courses is a typical example of organizational changes for a flexible and collective approach of learning. Henceforth, it is challenging but necessary to establish a successful learning and effective organization for enhancing organizational capabilities, sustainability, development and maintaining competitiveness. Responding to the changing needs of organizational development, it is essential to establish effective learning strategies and cultivate organizational learning culture (Lau, 2014) as well as to establish a learning organization and the knowledge transfer process (Weldy, 2009). Farago and Skyrme's (1995) proactive and flexible learning approach, Bunderson and Reagans's (2011) emphasis on collective learning, and Anderson and Lewis's (2014) advocacy of learning through practices and collective interactions are some key elements of learning approach and instructional design for coping with rapid and sudden changes within and outside organizations. Coincidentally, those organizational learning models discussed in previous paragraphs suggest that individual and/or collective learning is through the process of conceptualization with cognitive thinking for new knowledge acquisition (or learning), application (or use), dissemination (or sharing/transfer), management (or storage), creation, internalization, transformation and/or unlearning. To tackle challenges from the organizational routines, some researchers (e.g. Senge, 1990; Heorhiadi *et al.*, 2014) suggested to establish an open atmosphere with a friendly environment facilitating for successful collective learning among employees for effective knowledge sharing and transfer.

In order to understand further, we have conducted a typological review on the current organizational learning models through the application of typological reviews as the analytical method. Through reviews and analyses, we observed that individual models have their own characteristics and suggested foci whereas they are likely non-comprehensive but complement each other. Generally, the current models emphasize individual and collective learning through the process of conceptualization with cognitive thinking (i.e. principles) for the basic and advanced stages of knowledge learning (i.e. processes) so as to achieve innovation, problem solving skills, organizational development and/or transformation (i.e. purposes). Nevertheless, individual models are scattering over instead of focus on the principles, purposes and processes (the 3-Ps) of organizational learning. Based on our typological reviews and analyses, we have consolidated a new model with comprehensive features through complementing those relevant models for the coverage of the 3-Ps. It includes relevant concepts and suggestions derived from SDLLM, TLLM, HOLF, MLC and MCLO accordingly. Besides, some observed essential elements extracted from the current models have also been addressed so as to facilitate the development of effective organizational learning and knowledge transfer.

In brief, our new model includes learning organization as the carrier of organizational learning, of which the former involves learning orientation and level whereas the latter emphasizes stages of knowledge learning in the context of organization. This model is fundamentally conceptualized from a developmental and cyclic perspective of organisational start-ups to organisational growth in a learning organization operating organically and dynamically. It is particularly significant for the emergence of innovative business practices and ever-changing knowledge-based society faced by the organizations who have the changing needs of organizational development. The new model indeed has taken into account of both operational and conceptual aspects of organizational learning as well as the comprehensive needs to include the 3-Ps and the concerned elements derived from the selected current models. Additionally, technological innovations and impacts on organizational learning have also been considered in association with collaborative and collective learning. We envisage that the new

model could facilitate organizations to assess and adapt their organizational learning needs and orientations by applying the organic and dynamic model which emphasizes assessment on the competitive environment, technological trends and organizational growth. In addition, its conceptual framework with a developmental and cyclic perspective could further be examined through empirical research on existing learning organizations for developing a comprehensive and consolidated model.

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Tables and figures

Table 1: Typological reviews of current organizational learning models

| Major Elements of Organisational Learning Models | | | | | | | | | | | | | | | | | | | |
|--|------------|----------------------------|--------------------|------------------|--------------------|----------------|----------------|-------|------------|--------------------|---------|---------------------------------|---------|-----|---------|-----------------|-----------------|------------------|-------------|
| Type | OL Model | Learning Organisation (LO) | | | | | | | | | | Organisational Learning (OL) | | | | | | | |
| | | Learning Orientation | | | | | Learning Level | | | | | Learning Components - Knowledge | | | | | | | |
| | | Operational | | Conceptual | | | Internal | | | External | | Basic Stages | | | | Advanced Stages | | | |
| No | | System-oriented | Structure-oriented | Process-oriented | Strategy-oriented* | Goal-oriented* | Institutional | Group | Individual | Society/Community* | Global* | Acquisition | Sharing | Use | Storage | Creation* | Transformation* | Internalisation* | Unlearning* |
| 1 | UM | | | | | ✓ | ✓ | | ✓ | | | | | | | ✓ | ✓ | | ✓ |
| 2 | SLM | | | ✓ | ✓ | | | | ✓ | | | ✓ | | | | | | | |
| 3 | CoP | | ✓ | | | | | ✓ | | | ✓ | | ✓ | | | | | | |
| 4 | ELM | | | ✓ | | ✓ | | | ✓ | | | ✓ | | ✓ | | | | ✓ | |
| 5 | ALM | | | | ✓ | ✓ | | | ✓ | | | | | ✓ | | | | ✓ | |
| 6 | TLM | | ✓ | ✓ | | ✓ | | ✓ | | | | | | ✓ | | ✓ | | | |
| 7 | EHM | ✓ | ✓ | | ✓ | | | ✓ | | | | | ✓ | | | | | | ✓ |
| 8 | PDCA Cycle | ✓ | | | | ✓ | ✓ | | | | | ✓ | | ✓ | | ✓ | | | |
| 9 | ORJI Cycle | | | ✓ | | ✓ | | | ✓ | | | ✓ | | ✓ | | | | ✓ | |
| 10 | SDLML | | | | ✓ | ✓ | | | ✓ | | | ✓ | | ✓ | | ✓ | | | ✓ |
| 11 | TLLM | | | | ✓ | ✓ | | ✓ | ✓ | | | ✓ | | | | | ✓ | ✓ | |
| 12 | COLF | ✓ | ✓ | | | | ✓ | ✓ | ✓ | | | ✓ | ✓ | | ✓ | | | | |
| 13 | HOLF | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 14 | SLOO | | ✓ | | | | | | ✓ | | | ✓ | ✓ | | | | | ✓ | |
| 15 | GOLO | | ✓ | | | ✓ | | | ✓ | | | ✓ | ✓ | ✓ | | | | ✓ | |
| 16 | TLHM | ✓ | | | ✓ | | ✓ | | | | | ✓ | ✓ | | | ✓ | | | |
| 17 | MLC | ✓ | ✓ | | ✓ | ✓ | ✓ | | | ✓ | | ✓ | | | | ✓ | | | |
| 18 | MKCO | | ✓ | ✓ | | | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | |
| 19 | MCLC | | ✓ | | ✓ | | ✓ | | | | | ✓ | | ✓ | | ✓ | | | ✓ |
| 20 | TLS | | | ✓ | | | | | ✓ | | | ✓ | | ✓ | | | ✓ | ✓ | ✓ |

List of Abbreviations

- | | | |
|---|--|--|
| 1. UM : The Unlearning Model | 8. PDCA Cycle: Plan-Do-Check-Act Cycle | 15. GOLO: Garvin's Organizational Learning Orientation |
| 2. SLM : The Social Learning Model | 9. ORJI Cycle: Observation-emotional reaction-judgement-intervention Cycle | 16. TLHM: Three-level Hierarchy Model |
| 3. CoP : Communities of Practice | 10. SDLML: Single-loop and Double-loop Learning Model | 17. MLC: Model of Learning Company |
| 4. ELM : The Lewinian Experiential Learning Model | 11. TLLM: Triple-loop Learning Model | 18. MKCO: Model of Knowledge-creating Organization |
| 5. ALM : The Action Learning Model | 12. COLF: Crossan's Organizational Learning Framework | 19. MCLC: Model of Competitive Learning Organization |
| 6. TLM: The Team Learning Model | 13. HOLF: Huber's Organizational Learning Framework | 20. TLS: Transformative Learning Stages |
| 7. EHM: The Error Harvesting Model | 14. SLOO: Senge's Learning Organization Orientation | |

Table 2: Form of Existence of the Current Organizational Learning Models

| Form of Existence | Current Organizational Learning Models |
|---------------------------------------|--|
| Linear form of cycle (LFC) | <ul style="list-style-type: none"> - The Unlearning Model (UM) - The Social Learning Model (SLM) - The Lewinian Experiential Learning Model (ELM) - Plan-Do-Check-Act Cycle (PDCA Cycle) - Observation-emotional reaction-judgement-intervention Cycle (ORJI Cycle) - Huber's Organizational Learning Framework (HOLF) - Transformative Learning Stages (TLS) |
| Interrelated form of components (IFC) | <ul style="list-style-type: none"> - Communities of Practice (CoP) - The Action Learning Model (ALM) - The Team Learning Model (TLM) - The Error Harvesting Model (EHM) - Single-loop and Double-loop Learning Model (SDLML) - Crossan's Organizational Learning Framework (COLF) - Senge's Learning Organization Orientation (SLOO) - Garvin's Organizational Learning Orientation (GOLO) - Three-level Hierarchy Model (TLHM) - Model of Learning Company (MLC) - Model of Competitive Learning Organization (MCLC) |
| Matrix form of complexity (MFC) | <ul style="list-style-type: none"> - Triple-loop Learning Model (TLLM) - Model of Knowledge-creating Organization (MKCO) |

Table 3: Learning Orientation of the Current Organizational Learning Models

| Learning Orientation | Current Organizational Learning Models |
|---|--|
| Operational Learning (OL) | <ul style="list-style-type: none"> - Communities of Practice (CoP) - Crossan’s Organizational Learning Framework (COLF) - Model of Knowledge-creating Organization (MKCO) - Senge’s Learning Organization Orientation (SLOO) - Transformative Learning Stages (TLS) |
| Conceptual Learning (CL) | <ul style="list-style-type: none"> - The Unlearning Model (UM) - Triple-loop Learning Model (TLLM) - Single-loop and Double-loop Learning Model (SDLLM) |
| Operational - Conceptual Learning (OCL) | <ul style="list-style-type: none"> - Model of Learning Company (MLC) - Plan-Do-Check-Act Cycle (PDCA Cycle) - Three-level Hierarchy Model (TLHM) - Model of Competitive Learning Organization (MCLO) - The Team Learning Model (TLM) - The Error Harvesting Model (EHM) - Huber’s Organizational Learning Framework (HOLF) - The Social Learning Model (SLM) - The Lewinian Experiential Learning Model (ELM) - Observation-emotional reaction-judgement-intervention Cycle (ORJI Cycle) - Garvin’s Organizational Learning Orientation (GOLO) - The Action Learning Model (ALM) |

Table 4: Typological reviews of organizational learning models: A summary

| Knowledge Learning Approaches of OL in Different Stages | | | | | | |
|---|--------------------------|--------------|--------------------------------|--------------------------------|---------------------------------------|-------------------------|
| A Dichotomy of Learning Orientation in LO | | Operational | | Operational – Conceptual | | Conceptual |
| Level | Stages | Basic Stages | Basic Stages - Advanced Stages | Basic Stages - Advanced Stages | Basic Stages - Advanced Stages | Advanced Stages |
| External | Global Society/Community | CoP | | | MLC | |
| | Institutional | COLF | MKCO | | PDCA Cycle / TLHM / HOLF / MLC / MCLO | UM |
| Internal | Group | CoP / COLF | MKCO | | TLM / EHM / HOLF | TLLM |
| | Individual | COLF | MKCO / SLOO / TLS | | SLM / ELM / HOLF / ORJI Cycle / GOLO | SDLLM / TLLM / ALM / UM |

Figure 1: The consolidated organizational learning model for innovative business

